DOCKET FILE COPY ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

RECEIVED
AUG 18 1997
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160

JOINT REPLY COMMENTS OF BELLSOUTH CORPORATION, BELLSOUTH TELECOMMUNICATIONS, INC., U S WEST, INC., AND SPRINT LOCAL TELEPHONE COMPANIES TO FURTHER NOTICE OF PROPOSED RULEMAKING SECTIONS III.C.3.a-d, III.C.4

BELLSOUTH CORPORATION
BELLSOUTH
TELECOMMUNICATIONS, INC.

M. Robert Sutherland
Richard M. Sbaratta
Rebecca M. Lough
Suite 1700
1155 Peachtree Street, N.E.
Atlanta, GA 30309-3610
(404) 249-3390

Their Attorneys

U S WEST, INC.

Robert B. McKenna
John L. Traylor
Suite 700
1020 19th Street, N.W.
Washington, DC 20036
(303) 672-2798

Of Counsel,
Dan L. Poole

SPRINT LOCAL TELEPHONE
COMPANIES

Jay C. Keithley
Sandra K. Williams
1850 M Street
Suite 1110
Washington, D.C. 20036
(202) 828-7453

Attorneys for Sprint Local Telephone Companies

August 18, 1997

No. of Copies rec'd 0+4
List ABCDE

Reply Comments of:
BellSouth Corporation,
BellSouth Telecommunications, Inc.
U S WEST, Inc.
Sprint Local Telephone Companies

August 18, 1997

TABLE OF CONTENTS

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
	)	
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs	)	CC Docket No. 97-160
	)	

JOINT REPLY COMMENTS OF BELLSOUTH CORPORATION, BELLSOUTH TELECOMMUNICATIONS, INC., U S WEST, INC., AND SPRINT LOCAL TELEPHONE COMPANIES TO FURTHER NOTICE OF PROPOSED RULEMAKING SECTIONS III.C.3.a-d, III.C.4

I. INTRODUCTION

The Initial Comments to the Federal Communications Commission's ("Commission") Further Notice of Proposed Rulemaking,[1] on the platform design of the switching, interoffice trunking, signaling, and local tandem components of the cost proxy have pointed out numerous problems with the Hatfield Model. The BCPM sponsors believe that the new BCPM will address all of those areas. At this point, it is obvious that the problems in the Hatfield implementation are abundant and serious; as several parties have pointed out, the network that the Hatfield Model "engineers" is incapable of serving subscribers! While it is not our intent in

[1] In the Matter of Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45 and 97-160, Further Notice of Proposed Rulemaking, FCC 97-256, rel. July 18, 1997 ("Further Notice").

these Reply Comments to reprise every flaw in the Hatfield Model, we shall demonstrate why the new BCPM is the only model which determines the level of costs by reasonable and objective means.

II. USE OF A PURELY HYPOTHETICAL TRANSPORT & SIGNALING NETWORK ARCHITECTURE CANNOT PRODUCE A REALISTIC PICTURE OF NETWORK COSTS

The Hatfield Model produces interoffice facility mileages which bear no relation to reality.[2] This is because the model miscalculates route-to-air ratios and ignores geographical obstacles and jurisdictional constraints. Our purpose is not to dwell upon the model's errors but to illustrate some reasons why this purely hypothetical approach is not practical in a real world setting.

Hatfield's hypothetical transport model understates the transport regenerator investment required to connect distant network nodes. The model uses a 40-mile distance between nodes as the trigger for placement of a regenerator. The portion of the model which checks distances, however, is flawed because it performs this test on an individual Census Block Group ("CBG") basis. For example, two CBGs may each contain 25 mile route spans which are consecutive and connect two nodes, for a total span of 50 miles. Because the Hatfield algorithm does not consider the total 50-mile span, it does not place a regenerator where one is necessary. In effect, the model does not follow its own criteria for placing regenerators. Furthermore, Hatfield treats all offices within a state as if they

[2] Comments of GTE filed Aug. 8, 1997 at 17.

belong to a single operating company. This misrepresents the total amount of SONET interconnection equipment needed to connect different companies. In the future, as competition grows, the transport network will increasingly become a network of networks. Therefore, the single network assumption of the Hatfield Model is neither accurate nor forward-looking.

The Hatfield model ignores the existence of remote switching offices, creating an inefficient transport network. Remotes are typically connected to hosts by the most direct routes available. Because the Hatfield model ignores this fact, however, it connects remotes to hosts through the tandem switching network, as if the host and remote were unrelated switches. In rural areas, this can create route detours as long as 200 miles for a remote's traffic, often passing the traffic through a tandem not even owned by the operating company which owns the host and remote. This result is clearly nonsensical.

While the idea of a purely hypothetical switching and transport network has intuitive appeal to the extent that its goal is to objectively design the most efficient network possible, the Hatfield model demonstrates that the practical problems in implementing such an approach make it unrealistic. There is widespread agreement, among parties with actual experience designing networks, that data from the Bellcore Local Exchange Routing Guide ("LERG") is the best available source for data to model ring topologies, route distances, and host switch and remote switch locations.[3] The new BCPM model uses LERG data as its basis for plant placements.

The Appendix to these Comments contains a detailed analysis of these and other problems with the Hatfield transport and signaling modules.

III. A SWITCHING COST MODEL BASED ON AN AVERAGE COST FUNCTION IS OVERLY SIMPLISTIC AND MISREPRESENTS COSTS

AT&T Corp. and MCI Telecommunications Corporation ("AT&T & MCI") offer several reasons why switching cost characteristics cannot be modeled in detail. The first is that an algorithm which dynamically models the network configuration (mechanically places correctly-sized host or remote switches in each node) would be so complex as to be unworkable. We agree that a mechanized algorithm would be impossibly complex, but disagree completely with their conclusion that this issue requires the use of an average switch cost function. The solution to this problem is to use actual switch office, host/remote switch relationships, and interoffice route configurations from the Bellcore LERG, which is a publicly-available document.

The second point is that "any such approach would require additional data regarding switch prices -- by manufacturer and switch type -- that simply is not available."[4] This data is available, in all the necessary detail, from the two Audited LEC [local exchange carrier] Switching Models ("ALSM"). The third point is that

[3] See, e.g., Comments of Aliant Communications Co. filed Aug. 8, 1997 at 2; GTE at 11.

[4] Comments of AT&T & MCI filed Aug. 8, 1997 at 6.

assumptions or additional calculations would have to be made about the correct allocation of the host switch resources (such as processor time) which the remote switches use. Again, the ALSMs address these cost issues in detail, using sound principles of cost causality to partition the switch equipment into meaningful functional cost categories.

The new BCPM is using data from the Bellcore LERG to place switches and remotes. This data incorporates all of the experience and engineering judgment of the network builders. AT&T and MCI, however, strive to identify reasons why this methodology does not reflect forward-looking network configurations.[5] Their method is to rely upon one year, the most recent year of data available, from the Northern Business Information report (sometimes referred to as the McGraw-Hill study). The Hatfield modelers ignore the fact that even the most recent year's purchases are necessarily driven by the embedded base of switching equipment. For example, the vendor selection of a brand-new remote will necessarily be determined by that of available hosts.

The notion that a single year's data can reasonably represent switching costs for the entire U.S. network is highly suspicious. Common sense tells us that depending on a number of conditions, including individual corporate switch upgrade schedules, economic conditions, corporate restructures, regulatory decisions, natural events, and pure randomness, the dollar sales and configurations (size, model) of

---

[5] Id. at 8.

central office switches could vary from year to year. Rural Utilities Service ("RUS") data shows that the average price of host switches purchased by its borrowers varied from $395,000 to $920,000 within five years.[6]

IV. THE HATFIELD MODEL SYSTEMATICALLY EXCLUDES EQUIPMENT NECESSARY TO PRODUCE A FUNCTIONAL, RELIABLE NETWORK.

Joint Commentors Nevada Bell, Pacific Bell, and Southwestern Bell Telephone Company ("Joint Commentors") found that the Hatfield transport algorithm produced "nonsensical" network designs and cost estimates.[7] In Texas, because there are 16 LATAs, there must be 16 LATA tandem switches (legally, a single tandem cannot serve multiple LATAs). The Hatfield 4.0 model, however, places only 5.5 tandems for Texas. If Hatfield had only included data from the LERG, this error could have been avoided.

The Hatfield transport model understates the quantity of transport termination equipment required for special access by at least a factor of two. The model calculates the number of special access circuits based on a percentage of the total number of access lines in a given state. Each DS1 special access circuit requires termination equipment for each end (a total of two terminations per circuit). The Hatfield model, however, includes only one termination per circuit, thus including only half of the required terminations.

---

[6] Comments of RUS filed Aug. 8, 1997 at 6.

[7] Comments of Nevada Bell, Pacific Bell, and Southwestern Bell Telephone Company filed Aug. 8, 1997 at 8.

The Hatfield model does not include equipment for transmission traffic that must traverse multiple transport nodes. The quantity of SONET equipment, Digital Cross-connect Systems, and other related equipment placed in a switching office is based on the Minutes Of Use ("MOU") for that office alone. The model therefore assumes that both switched and special access transport terminate at the next adjacent office and that no traffic traverses a transport node in order to get to another node. Given that the Hatfield model appears to connect offices of different operating companies together, ignores the existence of remote switching offices that must connect to their host office (not necessarily the closest office), and does not consider the fact that a significant portion of interoffice traffic may not be destined for the next closest office, the number of OC-48 nodes is severely understated. Although the DS1 and DS3 cards required may be properly calculated, the number of OC-48 ADMs (and therefore optical transmitters/receivers) in which the cards reside is not.

V. THE NEW BCPM WILL ACCURATELY DETERMINE THE PORTION OF SWITCHING COSTS TO BE ASSIGNED TO THE PORT -- ALLOCATIONS ARE UNNECESSARY

AT&T and MCI continue to maintain that "[c]urrent data and ILEC cost studies indicate that the Hatfield Model allocation of 30% of switching costs to port investment is reasonable."[8] This claim is made based on data from only two cost studies from a single LEC and a second source as yet unnamed. This focus on the

[8] AT&T & MCI at 4.

data input serves only to obscure the fact that there is no evidence to support the use of such a simplistic allocation methodology in the first place. Hatfield continues to deny realities such as the fact that different vendor switch models have different proportions of non-traffic sensitive line port costs.

The new BCPM will supply the models and data to render this issue moot. The portion of switching cost to be assigned to the port will be explicitly identified. Although determining per line switching costs for universal service entails numerous analytical steps, one can summarize the process in two major phases. First, the model generates unit switching costs by using principles of cost causality to apportion investments in switch hardware items across several basic switch functions, for example, the investments per processor millisecond, per line port, and per line minute of use. Second, the analyst determines the type of switch function and the amount of each of those switch functions required to provide basic service. Aggregating the investments associated with the requisite switch functions enables the model to calculate the specific switching investment required to provide, for example, a line port or line usage per subscriber.

VI. THE SWITCH MODEL MUST RECOGNIZE GROWTH LINES TO BE REASONABLE

AT&T and MCI reiterate their contention that "there are no reliable, verifiable, publicly available data" to support a difference between new switch purchases and growth lines.[9] The RUS has data that shows that additional lines cost about 20% more that initial lines. Their data also show that the additional line investments rose from 26% to 38% of total switching expenditures from 1992 through 1996.[10] As noted in the Further Notice, Southwestern Bell Telephone Company has testified that their average cost for a growth line is $248.00, vs. $109.00 for a new switch installation.[11]

VII. AT&T & MCI MAKE NUMEROUS MISLEADING CLAIMS FOR THE HATFIELD MODEL

AT&T & MCI claim that the Hatfield Model builds "narrowband network from the bottom-up assuming the best available technology."[12] In the case of switching, nothing could be further from the truth. A correct "bottom-up" application of forward-looking economic cost methodology requires that the theoretical network be engineered from the individual component packages required to support the demand at the locations being studied. The only way, for example, to determine the correct amount of equipment to support the projected line usage levels is to obtain data on the actual usage per line at that location. There are also many other location-specific factors, thoroughly explained elsewhere,

[9] Id. at 10.

[10] RUS at 3.

[11] Further Notice ¶ 131.

[12] AT&T & MCI at 4.

that may go into this calculation. A single, crudely constructed, average cost function such as Hatfield's is a top-down methodology, not bottom-up.

AT&T & MCI go on to claim that the Hatfield approach "reflects market data and actual LEC purchasing practices"[13] and that the model reflects the economies that are obtainable from use of an efficient mix of host, standalone, and remote switches. Again, nothing could be further from the truth. As mentioned above, the Hatfield switching cost function is based upon data from only one year's purchases, which cannot possibly represent the cumulative value of an entire network. Furthermore, the Hatfield function is based upon only four data points, one of which, to our knowledge, has never been identified as to its source. We have no way of knowing what mix, efficient or otherwise, that data point is based upon. It is ludicrous to claim that this simplistic, per line switch cost function can be representative of the market conditions, contractual arrangements, and engineering considerations facing any particular company.

The profound flaws of the Hatfield switching module have been thoroughly exposed,[14] we will not belabor them further here. In a separate ex-parte filing on August 15, 1997, we provided a system description for the new BCPM Switch Module, which will provide high-quality, service area specific universal service and

[13] Id. at 6.

[14] GTE at Appendix 1.

unbundled network element ("UNE") switch costs based on a genuine bottoms-up, forward-looking economic cost methodology.

VIII. THE HATFIELD MODEL IGNORES CRITICAL PUBLICLY AVAILABLE DATA

While frequently complaining that publicly available, verifiable data sources do not exist, the Hatfield model developers ignore much data that is available.

The developers of the Hatfield model also seem to believe that the very act of placing a data input out for inspection makes the data valid. For example, a switch line administrative fill factor of 98% is presented when numerous available data sources place reasonable fill factors in the 90%-95% range. Hatfield seems intent upon creating a tautology of data parameters that support their conclusions. We disagree with this approach. Unsupported data is unsupported data, whether or not it is available for public inspection. Furthermore, the use of this unsubstantiated data is justified by claims that the user can change the input values. In this way, the developers attempt to avoid taking responsibility for the unsubstantiated data items which they place on the public record.

IX. CONCLUDING REMARKS

Respondents have presented sound evidence that the Hatfield model systematically understates the switching and transport network costs. The BCPM model has undergone extensive redevelopment in the past three months to ensure that any areas where it had weaknesses have been addressed. As a result, the new BCPM model will be undeniably more methodologically sound and computationally accurate than Hatfield. The BCPM sponsors look forward to commenting on additional aspects of the models in further portions of the Further Notice.

Respectfully submitted,

BELLSOUTH CORPORATION
BELLSOUTH TELECOMMUNICATIONS, INC.

By: M. Robert Sutherland

M. Robert Sutherland
Richard M. Sbaratta
Rebecca M. Lough
Suite 1700
1155 Peachtree Street, N.E.
Atlanta, GA 30309-3610
(404) 249-3390

U S WEST, INC.

By: Robert B. McKenna

Robert B. McKenna
John L. Traylor
Suite 700
1020 19th Street, N.W.
Washington, DC 20036
(303) 672-2798

Its Attorneys

Of Counsel,
Dan L. Poole

SPRINT LOCAL TELEPHONE COMPANIES

By: Jay C. Keithley
Jay C. Keithley
Sandra K. Williams
1850 M Street
Suite 1110
Washington, DC 20036
(202) 828-7453

Attorneys for Sprint Local Telephone Companies

August 18, 1997

APPENDIX - AN ANALYSIS OF THE HATFIELD TRANSPORT AND SIGNALING MODULES

Transport

- The Hatfield model appears to understate the quantity of transport termination equipment required for special access by at least a factor of two. The Hatfield model calculates the number of special access circuits based on a percentage of the total number of access lines in a given state. This number is then used to calculate the number of DS1s required for special access transport. However, the resulting special access requirement calculated accounts only for the number of *circuits*, not the number of *circuit terminations*. If 10,000 DS1 special access circuits are required, the transport network requires the equivalent of at least 20,000 DS1 equivalent terminations (excluding circuits traversing more than one transport node) to cover the point of origination and the circuit destination. The Hatfield model would only account for 10,000 DS1 circuit terminations in this example.
- The Hatfield model incorrectly allocates transport investments between access lines and special access circuits. As an example, if a 10,000 access line office has 100 special access DS1s and 100 DS1s used for interoffice switch traffic, the transport investment should be allocated 50% to special access and 50% to the local access line. Instead the Hatfield model would convert the 100 special

access DS1s to 2,400 DS0 equivalents, add this number to the 10,000 switched DS0s for a total of 12,400 DS0 equivalent lines, and divide 2,400 by 12,400 to derive the percent of transport investment allocable to special access. In this example, only 19% of the required transport investment would be attributed to special access. The methodology employed by the Hatfield model overallocates to access lines and underallocates to special access DS1 circuits. Note that one of the primary consumers of special access are the interexchange carriers.

- The SONET transport regenerator investment required is understated in the Hatfield model. Based on calculations within the Hatfield model, it appears that OC-12 regenerators are deployed when a regenerator is called for. Neither the OC-3 nor the OC-48 ADMs deployed in the Hatfield model's transport network can connect to an OC-12 regenerator. Note that the Hatfield investment input table does not specify the type of regenerator that you are paying for, although the table is very specific about the type of ADM installed. In addition, the Hatfield model bases its regenerator requirement on the fiber requirement calculated for each CBG. For example, a fiber distance within a CBG of 25 miles would not trigger the need for a regenerator using the 40 mile default. Therefore, two side by side CBGs each with a fiber distance of 25 miles would not trigger the need for a regenerator in the Hatfield model, despite the fact that the actual fiber distance between the two transport nodes is 50 miles.

- The Hatfield model treats all offices within a state as though they belonged to a single operating company. In transport, this means that fiber is only required to get you to the next office, despite the fact that this office may be owned by a different operating company. This has the overall affect of minimizing the total amount of SONET interconnection equipment as well as regenerators for any given operating company.
- The Hatfield model does not account for transmission traffic that must traverse multiple transport nodes. SONET equipment, DCS, and other related equipment placed in a switching office is sized based on the MOU and Special Access circuits *for that office alone.* Both local switched service and special access transport are therefore assumed to terminate at the next adjacent office and that no traffic traverses a transport node in order to get to another node. Given that the Hatfield model appears to connect offices of different operating companies together, ignores the existence of remote switching offices that *must* connect to their host office (not necessarily the closest office), and does not consider the fact that a significant portion of interoffice traffic may not be destined for the next closest office, the number of OC-48 nodes is severely understated. Although the DS1 and DS3 cards required may be properly calculated, the number of OC-48 ADMs (and therefore optical transmitters/repeaters) in which the cards reside is not.

- The Hatfield model ignores the existence of remote switching offices, creating an inefficient transport network. A remote office must connect its host office in order to "talk" to any access line outside of that remote office. As most remote offices are less than 5,000 lines, most remotes are first connected to a tandem (although not necessarily a tandem from the same operating company, according to the Hatfield model), and the remote is then by default connected to its host based on the Hatfield model's claim that all offices are eventually connected via their fiber layout. In a sparsely populated state, this means that an OC-3 transport node from a remote office may travel 200+ miles to that state's only tandem, traversing many offices along the way, and then take a return trip of 200+ miles via OC-48, again traversing many offices, in order to connect to its host, which may be located only a relatively short distance away from the remote.
- The use of bi-directional OC-48 SONET rings overstates transport capacity in the Hatfield model. An OC-48 bi-directional ring, when properly designed, can provide greater than OC-48 capacity over the ring as a whole. However, this capacity gain can only be achieved if the vast majority of the traffic originates and terminates on *adjacent* nodes on the ring. This means that a bi-directional ring is put together based on traffic demand between nodes, not geographic proximity. The more traffic that must traverse multiple nodes in a bi-directional ring architecture, the more inefficient the ring becomes. In fact, it is very

possible to create an OC-48 ring with *less than* OC-48 capacity by simply joining adjacent offices, as in the Hatfield model.

- Transport demand is based on MOU in the Hatfield model with no apparent consideration of the average busy hour in a day or the average busy hour in the busy season. It appears that MOU demand is assumed to occur evenly over a 24-hour period, which would result in significant call blockage during busy hours. This omission could possibly be "fudged" by the fill factor at the expense of the fill factor's true purpose.
- It is still unclear whether or not the transport network created by Hatfield 4.0 contains the equipment necessary to interconnect the transport network. If rings were actually created in the Hatfield model, rather than hypothesized based on equipment quantities, they would still not be connected to one another.

Signaling

- The Hatfield model creates a simple, single tier SS7 signaling network not suitable for large-scale deployment. The two-tiered signaling architecture employed by large LECs enables the local STP pairs deployed in each LATA to focus on basic call setup functions, passing the TCAP messages to a regional STP pair to handle database queries to the SCPs. The concentration of TCAP messages at the regional STP level reduces the number of costly front-end processors required on each SCP and reduces the load on the local STPs.

- The Hatfield model inappropriately models the SCP investment required to support an SS7 signaling network. SCPs are deployed in mated pairs by every large LEC as well as third-party signaling providers. Generally, a single SCP pair handles all 800/8xx queries, while a separate SCP pair handles all LIDB queries. Separate pairs are used due to the size of these respective databases and the volume of activity that is generated. This complex arrangement is accounted for by a single input in the Hatfield model, the "SCP investment per transaction per second," rather than calculated by the model on a state-by-state basis.
- Because the Hatfield model ignores host/remote relationship, A-Links are calculated between *all* offices, host or remote, in a LATA to the STP pair. Because remote office cannot "talk" to an STP, the number of links calculated for a given LATA is overstated. In addition, the Hatfield model appears to only connect the LEC's offices to the STP pair, ignoring the fact that many independent telcos also use the LEC's STPs in any given state.
- The A-Link distances used in the Hatfield model are not calculated in the model or its supporting input files and are therefore unverifiable.
- There is no mention of D-Link capacity within the Hatfield model. Although an A-Link occupancy value is supplied in the input file, no D-Link occupancy is evident. It is unclear whether D-Links incorrectly use the A-Link occupancy. A properly-engineered D-Link operates at no more than 20% capacity. A value

higher than 20% understates the number of D-Links required as well as the number of front-end processors required for each SCP pair.

- The monthly Local Number Portability ("LNP") cost of $0.29 per line provided by the Hatfield model does not appear to be a calculated value and is the same value for all states examined for the purpose of this filing. The implementation of LNP via the SS7 signaling network will require the deployment of several new SCP pairs by each LEC, along with a corresponding increase in the total number or links and ports for every SSP and STP in the network. Effectively, 100% of calls will require a TCAP query and response over and above normal TCAP activity.

CERTIFICATE OF SERVICE

I, Kelseau Powe, Jr., do hereby certify that on this 18th day of August, 1997, I have caused a copy of the foregoing **JOINT REPLY COMMENTS OF BELLSOUTH CORPORATION, BELLSOUTH TELECOMMUNICATIONS, INC., U S WEST, INC., AND SPRINT LOCAL TELEPHONE COMPANIES TO FURTHER NOTICE OF PROPOSED RULEMAKING SECTIONS III.C.3.a-d, III.C.4** to be served via first-class United States Mail, postage prepaid, upon the persons listed on the attached service list.

Kelseau Powe, Jr.

***Via Hand-Delivery**

(CC9645m/JT/rd)
Last Update 8/18/97

*Reed E. Hundt
Federal Communications Commission
Room 814
1919 M Street, N.W.
Washington, DC 20554

*James H. Quello
Federal Communications Commission
Room 802
1919 M Street, N.W.
Washington, DC 20554

*Susan P. Ness
Federal Communications Commission
Room 832
1919 M Street, N.W.
Washington, DC 20554

*Rachelle B. Chong
Federal Communications Commission
Room 844
1919 M Street, N.W.
Washington, DC 20554

*Regina M. Keeney
Federal Communications Commission
Room 500
1919 M Street, N.W.
Washington, DC 20554

*Sheryl Todd
Federal Communications Commission
Room 8611
2100 M Street, N.W.
Washington, DC 20554

(Including a 3x5 diskette w/cover letter)
(9 Copies)

*Emily Hoffnar
Federal Communications Commission
Room 8617
2100 M Street, N.W.
Washington, DC 20554

*Kathleen Franco
Federal Communications Commission
Room 844
1919 M Street, N.W.
Washington, DC 20554

*Tom Boasberg
Federal Communications Commission
Room 814
1919 M Street, N.W.
Washington, DC 20554

*James Casserly
Federal Communications Commission
Room 832
1919 M Street, N.W.
Washington, DC 20554

*Paul Gallant
Federal Communications Commission
Room 802
1919 M Street, N.W.
Washington, DC 20554

*Timothy Peterson
Federal Communications Commission
Room 8613
2100 M Street, N.W.
Washington, DC 20554

*Chuck Keller
Federal Communications Commission
Room 500
1919 M Street, N.W.
Washington, DC 20554

*International Transcription
Services, Inc.
1231 20th Street, N.W.
Washington, DC 20036

Sharon L. Nelson
Washington Utilities and Transportation
Commission
1300 So. Evergreen Park Drive, S.W.
POB 47250
Olympia, WA 98504-7250

Laska Schoenfelder
South Dakota Public Utilities Commission
500 East Capital Avenue
Pierre, SD 57501-5070

Martha S. Hogerty
Public Counsel for the State
of Missouri
Room 250
Harry S. Truman Building
POB 7800
Jefferson City, MO 65102

Thor Nelson
Colorado Office of Consumer Counsel
Suite 610
1580 Logan Street
Denver, CO 80203

Bridget Duff
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0866

Charles Bolle
South Dakota Public Utilities
Commission
500 East Capital Avenue
Pierre, SD 57501-5070